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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/629,642

Filing Date: July 29, 2003

Appellant(s): EVANS, JOHN W.

Eric Grondahl
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 06, 2008 appealing from the Office action mailed September 13, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

08/991,155, filed December 16, 1997.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

WO 89/09806	Reny	10-1989
5,031,579	Evans	7-1991
5,240,631	Greaney	6-1995

Chemical Abstracts 120:195478, "Evaluations of non-aqueous propylene glycol as an Engine coolant for heavy duty diesel engines", Coughenour et al, 1993

Chemical Abstracts 116:86516, "Aqueous and nonaqueous engine coolants based on propylene glycol", Dingley, 1991

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. Claims 7, 16 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The aforementioned claims state that the propylene glycol is present in an amount greater than 98.5% by weight; however, the Examiner cannot find support for this assertion. Appellant appears to have support for greater than 99.0% by weight (page 21 of appellants specification) and up to 95% by weight (page 5 of appellants specification) but appellants disclosure does not adequately support the specific data point of 98.5% as claimed.

Claim Rejections - 35 USC § 102

2. Claims 1-5, 8-12, 14, 26, 28-20, and 45-46 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 89/09806 to Reny et al.

Reny et al disclose a coolant composition comprising at least 90% by weight of an alkylene glycol and a corrosion inhibiting amount of an inhibitor comprising (a) from 0.02 to 4 parts by weight of an azole, (b) from 0.05 to 3 parts by weight of a molybdate salt and (c) from 0 to 3 parts by weight of phosphoric acid (page 3, lines 1-11). Reny et al further teach that their coolant composition most preferably contains essentially no water (pg. 5, lines 28-34).

As Reny et al teach all of the instantly required it is considered anticipatory.

Claim Rejections - 35 USC § 103

1. Claims 1-16, 26-32 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chemical Abstracts 120:195478 to Coughenour et al or Chemical Abstracts 116:86516 to Dingley or Evans (5,031,579), each in view of Mascioli et al or Greaney (5,422,026) is withdrawn in view of appellant's arguments.

Coughenour et al disclose the use of non-aqueous propylene glycol as an engine coolant (see abstract).

Dingley disclose the use of monopropylene glycol as the entire engine coolant (see abstract).

Evans '579 discloses a substantially anhydrous coolant comprising propylene glycol (col. 5, lines 50-53) and specifically teaches that said method comprises substantially no water (col. 6, lines 1-3).

Neither Coughenour et al nor Dingley nor Evans '579 disclose the inclusion of molybdate, nitrate or an azole compound.

Mascioli et al disclose an antifreeze composition comprising propylene glycol, sodium molybdate, sodium nitrate, and tolyltriazole (table 3, of example 1).

Greaney disclose an antifreeze composition comprising propylene glycol, sodium molybdate, sodium nitrate and tolyltriazole (table 3 example 1).

It would have been obvious to one of ordinary skill in the art to add the molybdate, nitrate and tolyltriazole components of either Mascioli et al or Greaney to the propylene glycol coolants of Coughenour et al or Dingley or Evans '579 because Mascioli et al or Greaney teach that molybdates, nitrates, and tolyltriazole are effective corrosion inhibitors for propylene glycol coolants, and it appears that the propylene glycol coolants of Coughenour et al or Dingley or Evans '579 would benefit from the corrosion inhibition of the additives disclosed by Mascioli et al or Greaney, absent a showing to the contrary.

2. Claims 1-5, 8-11, 13-14, 26-27, 29-32, 45 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (4,455,248).

3. Wood teaches a specific combination of corrosion inhibitors for glycol based antifreeze formulations, which provides protection of aluminum from corrosion under high temperature service conditions. Wood further teaches that said formulations comprise glycols such as ethylene glycol and propylene glycol and mixtures thereof (col. 2, lines 47-69) and optionally contain little or no water, wherein it is suggested that Woods is non-aqueous. Wood teaches that said formulations contain as little as 0.1

parts for every 100 parts by weight of alcohol, which would fall within the amount permissible by the definition of non-aqueous. Wood further comprises corrosion inhibitors such as azoles, nitrates and silicates in an amount from at least 0.05 parts by weight (column 4, lines 24-43).

4. Wood suggests the claimed components in their requisite proportions in the broad teachings and therefore it would have been obvious to the skilled artisan to comprise the component to specifically teach the claimed invention in the absence of a showing to the contrary.

(10) Response to Argument

5. Appellant argues that the specification as originally filed fully supports the claimed range limitation of greater than about 98.5% by weight of propylene glycol and is not new matter and is evidenced by the specifications teachings at paragraphs 0050-0051 stating that the additives range from 0.05 by weight to about 5.0% by weight, wherein a skilled artisan would recognize that the propylene glycol content of the fluid having these additives within the ranges is necessarily between 99.85% by weight to about 85.0% by weight.

6. The examiner contends that appellant's specification does not fully support the greater than 98.5% limitation and each embodiment represented therein because the specification does not clearly disclose to the skilled artisan that appellant considered this specific data point as part of their invention. See *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1328, 56 USPQ2d 1481, 1487 (Fed. Cir. 2000). Further, the arguments appellant makes concerning the additive limitations and how the skilled

artisan could reasonably discern the limitation of the propylene glycol assumes that the range of propylene glycol could range from 99.95 to 95.0% by weight and it would not have been reasonable for the skilled artisan to pick the specific data point of 98.5 without assuming every data point of 99.95 to 95.0% by weight was in the possession of appellant at the time the invention was made, which is contrary to the 112 2nd paragraph description requirements.

With respect to '806, Appellant states that '806 does not enable one skilled in the art to practice the methods as recited by the instant claims and all the embodiments disclosed in Remy, including the example of a mixture of ethylene glycol and propylene glycol, contain water added to the alkylene glycol and the addition of solutions of phosphoric acid. Further, Appellant states that Remy does not teach or suggest a fluid that contains no additives that require the presence of added water in the fluid as now recited by the instant claims. Also, Appellant states that '806 teaches that for mixtures containing propylene glycol and ethylene glycol, the addition of phosphoric acid is necessary for pH control, and in order for the phosphoric acid to perform its function as an acid, there must be sufficient water added for the phosphoric acid to ionize.

In response, the Examiner asserts, as stated previously, that page 3, lines 1-15 of '806 would suggest compositions containing no water and from 0 to 3 weight parts of a phosphoric acid and thus, these compositions do not contain additives that require water in the fluid to dissolve the additive as recited by the instant claims. The reference has been read in context and the Examiner believes the composition is complete. To strengthen the Examiner's position, '806 states that the alkylene glycol is used with

essentially no water, i.e., less than about 1 weight percent, on page 5, lines 25-35, which would include those compositions containing no water.

Additionally, the Examiner asserts that '806 clearly teaches compositions which contain little or no water as indicated on page 9, where compositions containing less than 1% by weight water are disclosed. Also note that, "non-aqueous" as recited by the instant claims is defined in the specification as allowing for the inclusion of some water, such as water in a concentration of about 0.5% by weight, as stated on pages 28 and 29 of the specification which would overlap with "less than about 1 weight percent" of water as preferred in the compositions taught by '806 (See page 5, lines 25-35 of '806). While Appellant contends that the statement in the specification on page 28 regarding the presence of up to 0.5% water in the heat transfer fluid of the present invention refers to water present as an impurity, the Examiner maintains that the specification defines a "non-aqueous" composition as one which may contain up to 0.5% by weight water and whether that amount of water is present as an impurity or as added water is not relevant. Thus, the Examiner maintains the '806 teaches non-aqueous compositions containing little or no water which are the same as the nonaqueous compositions recited by the instant claims.

With respect to Wood, Appellant once again states that since Wood necessarily teaches the use of sodium metasilicate, this would necessitate the addition of sufficient water for the sodium metasilicate to dissolve and remain in solution, i.e., in order for the sodium metasilicate to function. Note that, while sodium metasilicate may be insoluble in alcohol, Wood clearly suggests embodiments which contain sodium metasilicate and

also may contain no water; Wood teaches that the compositions may be formulated as concentrate compositions which contain no water (i.e., optionally, contain water). See column 3, lines 1-20. Alternatively, even if the composition does contain water, which is not required, Wood teaches that the composition may contain as little as 0.1 parts by weight of water for every 100 parts by weight of said alcohol which would fall within the amount of water permissible by the definition of "non-aqueous" given on page 28 of the specification. The fact that sodium metasilicate is soluble in water and not soluble in alcohols is not relevant to the teaching of Wood which clearly suggests concentrate compositions which contain little or no water and are the same as the non-aqueous compositions recited by the instant claims. Clearly, Wood teaches that sodium metasilicate can function in the composition without the presence of water (i.e. non-aqueous) as recited by the instant claims.

Furthermore, Appellant states, in Declarations of Evans Dated April 15, 2005, that silicates and phosphates, while valuable have limited solubility and Reny adds phosphoric acid is necessary good for pH control.

In response, the Examiner maintains, as stated previously, that this data is insufficient to overcome the prior art rejections applied above. The examiner maintains, however, that Reny et al specifically teach that it is preferable that the alkylene glycol is used with essentially no water (page 5, lines 28-24), wherein it appears that "essentially no water" would encompass amounts of less than 0.5%. Moreover, Reny exemplifies tolyltriazole and sodium molybdate as corrosion inhibitors (examples 1-2). Moreover, page 3, lines 1-15 suggest compositions that contain no water and thus, these

compositions do not contain additives that require water in the fluid to dissolve the additive as recited by the instant claims. The reference has been read in context and the Examiner believes that the composition is complete. Again, Reny et al states that the alkylene glycol is used with essentially no water (page 5, lines 25-45). Additionally, the Examiner asserts that the Reny et al reference clearly teaches composition that contain little or not water as indicated on page 9, where compositions containing less than 1.0% by weight water are disclosed. In response, note that, Reny et al specifically, teach embodiments which contain no additives that require water in the heat transfer fluid to dissolve the additive or to enable the additive to function as recited by the instant claims. The examiner further contends that Reny et al specially teach embodiments containing no phosphoric acid and thus, specifically teach embodiments which contain no additives that require water in the heat transfer fluid to dissolve the additive or to enable the additive to function as recited by the instant claims. Thus, the data does not appear to show any unexpected and superior results but just merely shows what would be expected. Additionally, as stated previously, a rejection under 35 USC 102 has been made under WO 89/09806 as set forth above and secondary considerations are not sufficient to overcome rejections under 35 USC 102.

Appellant argues that the obviousness statement in the conclusion of the anticipatory rejection of Reny is contradictory.

The examiner contends that the conclusory statement was an oversight and has been corrected to remove the obvious statements.

Appellant argues that the Reny examples 1,2 and C1 and C2 do not exemplify the claims presently presented.

The examiner contends that the examples in Reny are not required to anticipate the claimed invention. Reny clearly teaches the proportions of propylene glycol and suggests no added water and further does not require phosphoric acid (see above and claims stated in Reny). Accordingly, the teachings in Reny as a whole anticipate the claimed invention.

When the species is clearly named, the species claim is anticipated no matter how many other species are additionally named. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990) See also *In re Sivaramakrishnan*, 673 F.2d 1383, 213USPQ 441 (CCPA 1982).

Appellant argues that Coughenour's statements of "Non-aqueous propylene glycol demonstrates extremely good engine cooling corrosion protection and cylinder linear cavitation depression" suggest that there is no need for any coolant additive as suggested by the Declaration submitted by Evans on March 5, 2007.

The examiner contends that the Declaration added little or no patentable weight by stating that the prior art concentrates requiring little to no water, **had** to contain enough water to keep additives dissolved. The examiner contends that Coughenour, Dingley and Evans do not require water as stated within their disclosures and if they do require water as suggested by the Declaration, it would only be in amounts of impurities consistent with the amounts permitted by the claimed invention and absent a showing to the contrary.

Appellant further argues that one of ordinary skill in the art, based on the Evans '579 patent, would not have used a non-buffered propylene glycol composition which also included corrosion inhibitors additives."

The examiner contends and respectfully disagrees because it is the examiners positions, however, that it appears a buffer is not required to be employed in a composition comprising propylene glycol and either a molybdate, nitrate or azole as shown by Mascioli et al (5,240,631). Note, that the composition of Mascioli et al contains propylene glycol, a molybdate, a nitrate and tolyltriazole, and that no buffer is required (Table 1, column 3, lines 20-30). It is acknowledged that Mascioli et al teach that an alkali metal hydroxide is employed to provide a final pH of 7-10 for concentrate plus water coolant formulation (col. 2, lines 49-51), however the inclusion of the alkali metal hydroxide appears to be limited to the situation involving ready to use formulations and not the concentrates as suggested herein. Therefore, Evans does suggest applicant's claimed invention in view of the Mascioli et al.

Appellant states that Mascioli et al or Greaney et al teach the use of corrosion inhibitors in aqueous compositions and they require additive that require water to function.

The examiner respectfully disagrees and contends that Mascioli et al or Greaney et al et al each teach that the water content is in small amounts from 1 to 5% as compared to appellant's less than 0.5%, however, Mascioli et al or Greaney et al are relied upon to only to show that the claimed "propylene glycol soluble additives" are well known in the art for use within glycol based coolant compositions. Moreover, it is well

established that optimization is well within the level of ordinary skill in the art.

Accordingly, Mascioli et al or Greaney et al are valid for their suggestions of additives well known in the coolant art and suggest that said additives in combinations with low water and propylene glycol alcohols would have been obvious to the skilled artisan of ordinary skill.

An obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not. See KSR Int'l Co. v. Teleflex Inc., 550 U.S. __, 2007 WL 1237837, at *12 (2007) (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided herein.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Necholus Ogden, Jr./

Conferees:

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Supervisory Patent Examiner, Art Unit 1796

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TQAS

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